

National Committee on Automation, Control and Instrumentation (NCACI) Newsletter, Number 49, February 2018

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IFAC 2017 World Congress

The 20th World Congress of the International Federation of Automatic Control (IFAC) was held in Toulouse France from the 9th to the 14th of July 2017. It was also a fitting celebration of the 60th anniversary of IFAC in the country where it was founded in 1957. The conference hosted 11 plenary lectures, 8 panel sessions, 25 pre-congress workshops & tutorials all across 28 parallel sessions.



Conference paper metrics

According to the details published in the conference manifesto:

Total number of contributions received: 4,267

Number of reviewers: 5,726

Number of papers accepted: 2,800

- 1,512 contributed papers
- 1,145 papers submitted to invited sessions or Open invited tracks
- 143 Extended abstract papers
- 35 Invited sessions

The overall acceptance rate for the conference was 66.4%.

Australia had a relatively strong representation at the conference with 49 attendees providing 55 presentations. With 72 initial submissions, the acceptance rate for Australia was around 10% higher than the overall average for the conference.

Iven Mareels' Plenary talk

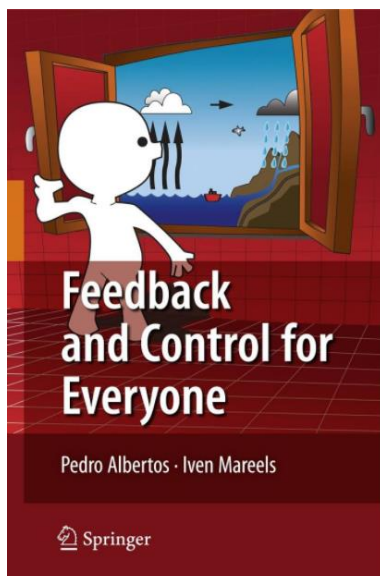


Iven Mareels presented the first Plenary talk for the conference and it was entitled: "Systems Engineering for Water Networks". He highlighted the importance of improving water management. Current predictions are expecting that, by as soon as 2030, the majority of the world's population will experience water shortage for extended periods of time. Iven went on to explain the Systems Engineering approach to water management. He also provided details of the effectiveness of automation systems that were developed in collaboration with Industry for controlling irrigation systems in Australia. Iven

concluded with a description of some open problems and recommendations for applying Systems Engineering approach over even larger scales for greater impact.

IFAC Harold Chestnut Prize

The 2017 Harold Chestnut prize was awarded to Pedro Albertos and Iven Mareels for their book *Feedback and Control for Everyone* (Springer 2010). Congratulations to Pedro and Iven on this significant achievement! The prize is only awarded once every three years. A total of 10 prizes have been awarded since its creation in 1987. It is impressive to note that three of the ten books that have received the prize had an Australian author/co-author.



"This award is presented at each Triennial Congress for the best Control Engineering textbook for which the first edition(s) occurred not later than the Congress just prior to the one at which the award is presented. It recognizes the author(s) of the textbook(s) judged to have most contributed to the education of control engineers. The candidates for the prize are nominated by a selection committee, while the books under consideration come before the committee through recommendation of the control engineering community. The prize consists of a monetary prize and a certificate. The funds for this prize were donated by the family of Harold Chestnut, IFAC's first president. This prize was created in 1986 and renamed in 2002."

<https://www.ifac-control.org/awards/textbook-award>

Australian IFAC Fellows

Australia now has seven IFAC fellows.

Table 1 List of Australian IFAC Fellows

Year of admittance	Fellows
2005	Brian Anderson
	Robert Bitmead
	Graham Goodwin
2011	Reza Moheimani
2011 - 2014	Richard Hume Middleton
	Ian R Petersen
2014 - 2017	Iven Mareels

Congratulations to Iven Mareels on being elected to IFAC Fellow during the 2014 – 2017 period: *for contributions to the theory and practice of adaptive systems, with applications to irrigation management and power systems.*

A Call for Australian Researchers to Organise IFAC Events

On the world scene the two main organisations representing research advances in the control field are the International Federation of Automatic Control (IFAC) and the IEEE Control System Society. Australian researchers are major contributors in both organisations, not only through their contributions to the literature, but also as volunteers in managing the affairs of these organisations. In publication terms, conferences and journals, this contribution is well above the world average (both in volume as well as citation impact). Given this, one would expect that Australian researchers also contribute in a similar manner to all processes related to the peer review of these fields.

It would be nice to see a greater proportion of the available international events in Automation and Control be hosted here in Australia.

Therefore the committee is inviting members of the Australian control community to consider organising one of the future IFAC events in Australia. The committee will be prepared to assist you in terms of committing its resources.

If you are interested please contact the NCACI care of:

Maria Morozova

MMorozova@engineersaustralia.org.au

Ian Petersen: Reappointed on IFAC Council

Congratulations to Professor Ian Petersen on his nomination and subsequent re-election as IFAC Member of the Council. Ian was first elected to IFAC Council in 2014 at the IFAC World Congress in Cape Town. Ian's reappointment for a second term of Office is from 2017 to 2020 (from the date of the IFAC General Assembly at each respective IFAC world Congress).

2017 ACI Undergraduate Thesis Prize – Call for Entries

The National Committee on Automation Control and Instrumentation (ACI) awards the Undergraduate Thesis Prize every year.

This prize recognises excellence in undergraduate project work in ACI engineering. The award aims to:

- encourage undergraduate interest in ACI Engineering;
- enhance student knowledge and application of ACI Engineering disciplines
- encourage academic participation in ACI Engineering as part of undergraduate education.

Eligibility:

Any project work undertaken as part of the award of a professional undergraduate qualification relevant to Automation, Control and/or Instrumentation and reported in the form of an academic thesis shall be eligible.

Both individual student entries and student team entries are eligible for the award.

Prize:

The winner receives \$1000 and a framed certificate.

Entries:

Entries for the 2017 Automation, Control and Instrumentation Thesis Prize will close 1st May 2018.

For further information please visit the ACI website page:

<https://www.engineersaustralia.org.au/News/nominations-are-now-open-2017-ncaci-undergraduate-thesis-prize>

Or contact

Maria Morozova

MMorozova@engineersaustralia.org.au

The Ian Petersen 60th Birthday Workshop



A workshop was held, on December 11th 2016 at the IEEE Conference on Decision and Control (CDC) in Las Vegas, to celebrate (along with his birthday) Ian Petersen's contributions to the Control Systems field. His areas of interest and contributions include (among other): Quantum control, robust systems, negative imaginary systems and H-infinity control. He has published over 400 journal and conference articles. The workshop included invited speakers, some of Ian's colleagues, collaborators and former students. Ian's wife and son attended the workshop dinner.

For the original and complete article see: *p93 IEEE Control Systems Magazine, October 2017*

Iven Mareels: Transition from Dean to Industry

From 15th Feb 2018, Professor Mareels will lead IBM's Melbourne-based research laboratory. The lab, of about 120 researchers, pursues research in the areas of healthcare informatics (such as predicting epileptic seizures from deep brain implant data), artificial intelligence (learning systems), blockchain and quantum computing (IBM Q-network). Iven has previously contributed to both the healthcare informatics and AI research agendas, but clearly blockchain and quantum computing will be new endeavours to learn about. The IBM Research Lab in Melbourne is one of 12 IBM Research Laboratories across the world. IBM Research is the pride of IBM, and employs nearly 3,000 researchers world wide (see also <http://www.research.ibm.com/>).

After 20 years at the University of Melbourne, where he spent the past 10 years as the Dean of the Melbourne School of Engineering setting and implementing an ambitious agenda of growth and change, he sees that the time for change is right. In particular he perceives a great opportunity to learn how to create, to set and to pursue research agendas that create value for clients as well as the company, and to strive for innovation that matters. He also looks forward learning about blockchain and quantum computing and explore how his systems engineering and control theory background can contribute in these fields.

Professor Mareels will maintain strong ties with the academic world, which he entered through Gent University, Belgium in 1977 (already 40 years ago). Inter alia, he will retain his title at the University of Melbourne, where he is a Redmond Barry Distinguished Professor. Moreover, one of the key objectives in his new role will be to strengthen and expand the collaboration between University research here in Australia and the IBM Research Lab in Melbourne.

Newly elected IEEE Fellows 2017

Congratulations to the six people, from Australian Universities, who were elected as IEEE Fellows in 2017.

for contributions to traveling wave-based transmission line protection and fault location

Zhaoyang Dong

The University of Sydney

Sydney, NSW, Australia

for contributions to hardware/software codesign

Saman Halgamuge

University of Melbourne

Victoria, Australia

for contributions to nonlinear estimation and control

Stephen Hanly

Macquarie University Sydney, NSW, Australia

for contributions to compression and communication of remotely sensed imagery

Robert Mahony

The Australian National University

Canberra, ACT, Australia

for leadership in DVD authoring and digital multimedia technologies

Eduardo Nebot

University of Sydney

Sydney, NSW, Australia

for contributions to energy-efficient design of digital and mixed-signal circuits

Brett Ninness

University of Newcastle

Newcastle, NSW, Australia

Professor Peter Corke

Congratulations to Professor Peter Corke, Director of the Australian Centre for Robotic Vision

He has been named 2017 Australian University Teacher of the year

Over the last 20 years Peter has put significant effort into creating teaching resources for education in Robotics. Among other things his effort include: online lectures, the establishment of the innovative online global Robot Academy and the development of a series of Massive Open Online Courses (MOOCs).

<https://www.roboticvision.org/centre-director-peter-corke-named-2017-australian-university-teacher-of-the-year/>

He has been awarded the title of Distinguished Professor by QUT in 2017. *“It is only the eighth time in QUT’s history that the university has awarded the title of Distinguished Professor to an outstanding academic.”*

Elected as a Fellow of the Australian Academy of Technology and Engineering (ATSE) in 2017

“Professor Corke is a pioneer in the development and application of land, aerial and underwater robotics for applications including mining, agriculture, asset and natural environment monitoring. He is recognised for his major contributions in the use of vision to enable robots to interact with the environment without precise prior knowledge or calibration.”

<https://www.atse.org.au/content/publications/media-releases/2017/atse-elects-key-leaders-fellowship.aspx>

**The 2018 Australian & New Zealand Control Conference – ANZCC 2018
Swinburne University of Technology, Melbourne, Australia, 7 - 8 December 2018**



An Invitation to attend the ANZCC 2018

Dear Fellow Academics, Researchers and Students

We wish to cordially invite you to attend the 2018 Australian & New Zealand Control Conference – ANZCC 2018, 7-8 December 2018. This time it will be held at Swinburne University of Technology, Melbourne VIC 3122, Australia.

Swinburne University of Technology is a world-class, multidisciplinary institution leading the way in science, technology, business, design and innovation. The university's strengths build on the founding principles of equal opportunity, student-focused learning and industry engagement. Much of Swinburne's research is concentrated in its specialist centres, which are noted for their industry links, community service and multidisciplinary approach.

Swinburne University of Technology has strategically invested and recruited some talents in Control Science and Engineering to build a world-class research team, which has a great impact on the Swinburne's Academic Ranking of World Universities 2017 and the ERA 2018 Ranking.

The ANZCC series have, by now, grown to an internationally recognised scientific event. We believe that ANZCC 2018 will place the ANZCC series to the next level of its international distinction.

I look forward to warmly welcoming you at ANZCC 2018.

Yours sincerely,



The ANZCC 2018 General Chair
Distinguished Professor Qing-Long Han

Pro Vice-Chancellor (Research Quality)
Swinburne University of Technology
John Street, Hawthorn, Melbourne
Victoria 3122, Australia
Telephone: +61 3 92143808
Email: qhan@swin.edu.au

Australian Control Conferences – AUCC/ANZCC Schedule

Table 2 The AUCC/ANZCC series schedule

Year	Location	Chair	Papers printed	Submitted	Delegates
AUCC					
2011	Melbourne (University of Melbourne)	Dragan Nestic	88	134 (incl. 1 abstract)	
2012	Sydney (UNSW)	Ian Petersen	81	106	114
2013	Perth (Freemantle)	Victor Sreeram	83	123 (incl. 2 abstracts)	95
2014	Canberra (ANU)	Robert Mahony	52	72	76
2015	Gold Coast (Griffith University)	Ljubo Vlacic	70	94	93
2016	Newcastle (Newcastle City Hall)	Minyue Fu	TBA	TBA	TBA
ANZCC					
2017	Gold Coast (Gold Coast Convention Centre) in conjunction with Asian Control Conference (ASCC)	Ljubo Vlacic	TBA	TBA	TBA
2018	Melbourne (Swinburne)	Qing-Long Han			

Other upcoming Control and Automation Conferences 2018 Australia



The 2018 IEEE International Conference on Robotics and Automation (ICRA)
21st – 25th May 2018, Brisbane Convention and Exhibition Centre
Anticipated attendance: 2,000



ENGINEERS
AUSTRALIA

The 11th International Conference on Intelligent Robotics and Applications,
Newcastle, Australia, August 9-11, 2018.
<http://www.icira2018.org>

Editors

Dr. Michael Lees Michael.Lees@cub.com.au

Maria Morozova MMorozova@engineersaustralia.org.au